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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,453	04/14/2005	Ryosuke Takahara	270647US3PCt	6879

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EXAMINER	
REDDING, THOMAS M	

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
01/08/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/531,453

Applicant(s)

TAKAHARA, RYOSUKE

Examiner

Thomas M. Redding

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply.

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/14/2005</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it contains references to elements in the drawings. The abstract should stand on its own and not require reference to other elements in the specification. Correction is required. See MPEP § 608.01(b).

Claim Objections

2. Claim 7 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zabele (US 5,712,921) in combination with Zeltner (US 5,398,925).

Regarding claim 1, Zabele working in the same field of endeavor of print quality inspection ("This invention relates to print quality control", Zabele, column 1, line 9) teaches [a] system for inspecting quality of printed matter comprising illuminating means for illuminating the printed matter ("Continuous illumination is provided with a Mita 21" halogen bulb 44 and reflector assembly 46", Zabele, column 4, line 44, and figure 2), ("The camera is aligned so that a scan line is acquired from the top of the center roller 53", Zabele, column 6, line 63), photographing means for detecting light illuminated by said illuminating means and reflected on the printed matter to import image information of the printed matter ("the scanning element 38 is preferably constructed from a Dalsa CL-C4-2048M line scan CCD camera 39, and a Nikon AF Micro-Nikkor 60 mm f2.8 macro lens 37", Zabele, column 4, line 37), thereby inspecting any defects of the printed matter in line on the basis of said image information, characterized in that said photographing means has photo position on the printed matter linearly along an axis of the impression cylinder, said illuminating means being adapted to condense illumination light into line along the axis of the impression cylinder ("Continuous illumination is provided with a Mita 21" halogen bulb 44 and reflector assembly 46", Zabele, column 4, line 44, and figure 2, Zabele's lighting system is aligned with the axis of the cylinder), thereby making the same in conformity with the photo position on the printed matter.

Zabele does not disclose an air injection means for pressing said printed matter printed by a sheet-fed printer against the impression cylinder, said air injection means being adapted to stably press the printed matter at the photo position so as to photograph a whole surface of the printed matter from photo-start to photo-end positions.

Zeltner, working in the same problem solving area of handling flat stock material ("The invention relates to a device for achieving a flat or flush contact of stocks or printing materials, particularly on a curved surface of a cylinder by which the stock or printed material is conveyed into a printing nip", Zeltner, column 1, line 6), does teach an air injection means for pressing said printed matter printed by a sheet-fed printer against the impression cylinder said air injection means being adapted to stably press the printed matter at the photo position so as to photograph a whole surface of the printed matter from photo-start to photo-end positions ("as a printed sheet moves past the blowing-air bars, the printed sheet, starting from the center thereof and moving towards the leading and trailing edges thereof, experiences successive smoothing in a direction opposite to the transport direction thereof", Zeltner, column 2, line 12).

It would have been obvious at the time the invention was made for one of ordinary skill in the art to combine the air injection means of Zeltner with the inspection system of Zabele as "[t]he application of blown air in continuous succession reliably irons out creases and wrinkles, especially in the case of very thin stock, with the result that a sheet conveyed on the surface of the impression cylinder is in full contact with the surface" (Zeltner, column 2, line 17)

Regarding claim 2, the combination of Zabele and Zeltner teaches a system for inspecting quality of the printed matter as claimed in claim 1 wherein the air injection means has an air pressing position on the printed matter at which the printed matter is pressed against the impression cylinder and which comes closer to the photo position on the printed matter, air being blown substantially perpendicular to the printed matter ("if thin grades of stock are to be processed, the electromotively driven blowing-air bar 7 is swivelled through an angle of incidence α_2 with respect to the perpendicular. The escaping blowing-air is then directed towards the surface of the impression cylinder 2 and not towards the cylinder nip formed between the impression cylinder 2 and the transfer drum 4", Zeltner, column 4, line 36, Zeltner's air jets are set closest to perpendicular when the stock is thin)

Regarding claim 3, the combination of Zabele and Zeltner teaches a system for inspecting quality of the printed matter as claimed in claim 1 wherein the air injection means has an air pressing position at which the printed matter is pressed against the impression cylinder and which is in conformity with the photo position on the printed matter system for inspecting quality of the printed matter as claimed in claim 1 wherein the air injection means has an air pressing position at which the printed matter is pressed against the impression cylinder and which is in conformity with the photo position on the printed matter ("Rotatably mounted between the impression cylinder 2 and the transfer drum 4 is an adjustable blowing-air bar 7 disposed on a perpendicular to an imaginary line connecting the axes of rotation of the impression cylinder 2 and the transfer drum 4", Zeltner, column 4, line 2, the axis of Zeltner's air jets are parallel to the axis of the impression cylinder and are thus in conformity with the photo position which is also along the axis)

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zabele (US 5,712,921) and Zeltner (US 5,398,925) in combination with Daane (US 4,369,584).

Regarding claim 4, the combination of Zabele and Zeltner teaches a system for inspecting quality of the printed matter as claimed in any of claims 1-3 as described above.

The combination of Zabele and Zeltner does not teach wherein the air injection means has a distance from air injection ports to a surface of the printed matter in a

range of 5-30 mm, air static pressure of the air injection ports by which the printed matter is pressed against the impression cylinder being set to a range of 5-30 kPa.

Daane, working in a similar problem solving area of handling web material does teach an air injection means has a distance from air injection ports to a surface of the printed matter in a range of 5-30 mm ("The nozzle is so arranged that the jet impacts the web within a short distance (e.g., 1/2 in.) in the direction of web travel from the line of tangency of the web to the roller, and is close enough to the web (e.g., about 1/8 in.) to avoid substantial dispersion or divergence of the jet before it impacts the web", Daane, Abstract, line 10, and "Preferably the nozzle should not be spaced from the web by a distance substantially greater than four times the width of its slot outlet", Daane, column 6, line 56), air static pressure of the air injection ports by which the printed matter is pressed against the impression cylinder being set to a range of 5-30 kPa ("The jet issues from a nozzle to which pressure air is fed (at, e.g., 3 psi)", Daane, Abstract, line 6, 3 psi is about 21 kpa, and "To achieve such a pressure gradient by applying pressure air to the web, to be translated into pressure of the web in the direction towards the roller, it is not practical to use a supply air pressure of more than a few pounds per square inch", Daane, column 6, line 3). One of ordinary skill in the art would use the teachings of Daane to calculate practical nozzle pressure and distance values based on application parameters which would result in values in the applicant's range.

It would have been obvious at the time the invention was made for one of ordinary skill in the art to apply the methods of Daane to calculate pressure and distance values with the print matter quality inspection system of Zabele, Zeltner and Daane "to provide a simple, inexpensive and energy-efficient method and means for preventing the intrusion of an air film between a lengthwise moving web and a cylindrical surface on a rotating roller around which the web has partial wrapping engagement, thereby maintaining intimate contact between the web and the roller; and to effect this result without engaging any solid object against the surface of the web that faces away from said roller", (Daane, column 3, line 13).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zabele (US 5,712,921), Zeltner (US 5,398,925) and Daane (US 4,369,584) in combination with Cote et al. (US 6,603,582).

Regarding claim 5, the combination of Zabele, Zeltner and Daane teaches a system for inspecting quality of the printed matter as claimed in claim 4 wherein the illuminating means comprises a reflector for condensing illumination light into line along an axis of the impression cylinder ("The reflector assembly 46 is placed between the bulb and the camera to focus the illumination output onto the imaging area", Zabelle, column 5, line 23).

The combination of Zabele, Zeltner and Daane does not explicitly teach that the reflector is an ellipsoidal reflector.

Cotte, working in a similar problem solving area of document imaging does teach using an ellipsoidal reflector for condensing illumination light into [a] line ("The elliptical shape of the reflector 30 thus causes the light rays emitted from one of the focuses (the light source 28) to be concentrated on the other focus (the strip of light 36) situated in the plane P to be illuminated", Cotte, column 4, line 8).

It would have been obvious at the time the invention was made for one of ordinary skill in the art to use the elliptical reflector taught by Cotte with the print matter quality inspection system of Zabele, Zeltner and Daane for "energy saving, typically by a factor of about ten to about fifty compared with lighting the entire document; no need to air-condition the working premises because less power is consumed; greater ease in obtaining good uniformity of lighting over the work surface; and reduced bulk compared with traditional lighting systems" (Cotte, column 2, line 49 and figures 3-5).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zabele (US 5,712,921), Zeltner (US 5,398,925) and Daane (US 4,369,584) in combination with King et al. (US 5,768,017).

Regarding claim 6, the combination of Zabele, Zeltner and Daane teaches a system for inspecting quality of the printed matter as claimed in claim 4.

The combination of Zabele, Zeltner and Daane does not teach wherein the illuminating means comprises a cylindrical lens for condensing illumination light into line along an axis of the impression cylinder.

King working in a similar problem solving area of producing uniform lighting does teach an a cylindrical lens for condensing illumination light into [a] line ("The cylindrical lens 7 is used to focus the collimated beam of light to a line in one transverse direction and to a point in the other at the focal plane of the cylindrical lens 7", King, column 4, line 17).

It would have been obvious to one of ordinary skill at the time the invention was made to use the cylindrical lens taught by King with the with the print matter quality inspection system of Zabele, Zeltner and Daane for energy saving, typically by a factor of about ten to about fifty compared with lighting the entire document; no need to air-condition the working premises because less power is consumed; greater ease in obtaining good uniformity of lighting over the work surface.

Application/Control Number:
10/531,453
Art Unit: 2624

Page 11

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas M. Redding whose telephone number is (571) 270-1579. The examiner can normally be reached on Mon - Fri 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TMR/



VIKKRAM BALI
PRIMARY EXAMINER